...dent and teacher: Use this cover sheet for mailing or faxing.

ASSIGNMENT BOOKLET

9110 Mathematics 9
Module 3

FOR STUDENT USE ONLY	
Date Module Submitted: _____	(If label is missing or incorrect)
Time Spent on Module: _____	File Number: _____
	Module Number: _____

FOR TEACHER USE ONLY

Assigned Teacher: _____

Module Grading: _____

Graded by: _____

Date Module Received:

_____

Module Assignment Recorded: _____

Student's Questions and Comments

Apply Module Label Here

Name

Address

Postal Code

Please verify that preprinted label is for correct course and module.

Teacher's Comments

_____
Teacher

These instructions are for students registered with the Alberta Distance Learning Centre.

INSTRUCTIONS FOR SUBMITTING THIS DISTANCE LEARNING ASSIGNMENT BOOKLET

When you are registered for distance learning courses, you are expected to submit Assignment Booklets for correction regularly. Try to submit each Assignment Booklet as soon as you have completed it. Do not submit more than one Assignment Booklet in one subject at the same time. Before submitting your Assignment Booklet, please check the following:

- Are all the assignments completed? If not, explain why.
- Has your work been reread to ensure accuracy in spelling and details?
- Is the booklet cover filled out and the correct module label attached?

MAILING

1. Postage Regulations

Do **not** enclose letters with Assignment Booklets.

Send all letters in a separate envelope.

2. Postage Rates

Take your Assignment Booklet to the post office and have it weighed. Attach sufficient postage and seal the envelope. Assignment Booklets will travel faster if sufficient postage is used and if they are in large envelopes that do not exceed two centimetres in thickness.

FAXING

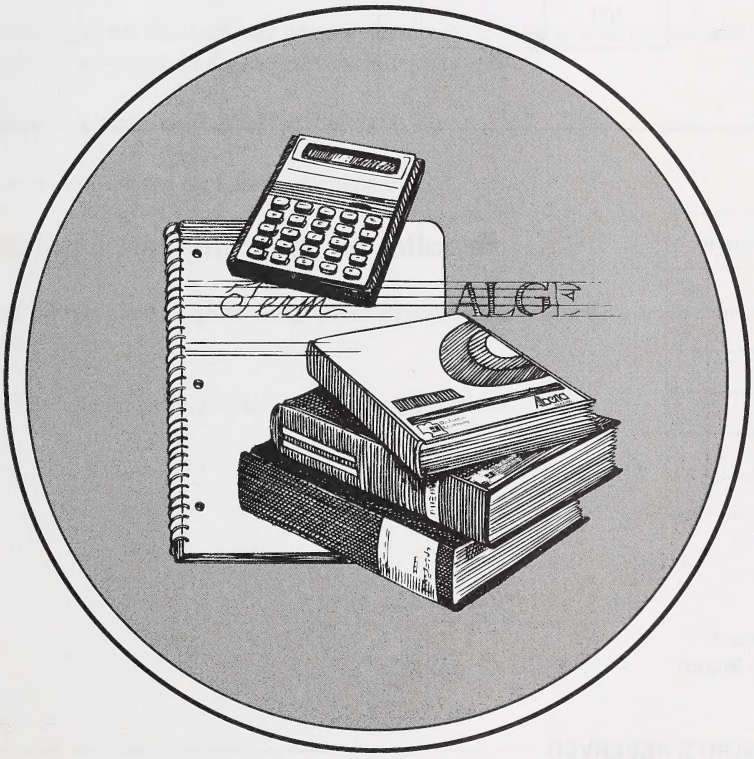
1. Assignment Booklets may be faxed to the Alberta Distance Learning Centre. Contact your teacher for the appropriate fax number.

2. All faxing costs are the responsibility of the sender.

E-MAILING

Assignment Booklets may be e-mailed to the Alberta Distance Learning Centre. Contact your teacher for the appropriate e-mail address.

MATHEMATICS 9
MODULE 3



Equations and Inequations

ASSIGNMENT BOOKLET

Distance Learning

Alberta EDUCATION

FOR TEACHER'S USE ONLY

Summary

	Total Possible Marks	Your Mark
Section 1 Assignment	45	
Section 2 Assignment	30	
Final Module Assignment	25	
	100	

Teacher's Comments

This document is intended for	
Students	✓
Teachers	✓
Administrators	
Parents	
General Public	
Other	

Mathematics 9
Assignment Booklet
Module 3
Equations and Inequations
Learning Technologies Branch
ISBN 0-7741-1128-3

ASSIGNMENT BOOKLET
MATHEMATICS 9 – MODULE 3: EQUATIONS AND INEQUATIONS

Your mark on this module will be determined by how well you do your assignments in this booklet.

Work slowly and carefully. If you are having difficulties, go back and review the appropriate section.

There are two section assignments and one final module assignment in this Assignment Booklet. The total value of these assignments is 100 marks. The value of each assignment is stated in the left margin.

This Assignment Booklet may be completed with the use of a calculator and resource materials. However, you must do the assignment **independently**.

You may do your rough work on your own paper.

Be sure to proofread each assignment carefully.

Section 1 Assignment: Equations

45

Read all the parts of your assignment carefully and record your answers in the appropriate place.

(10) **1.** Solve the following equations. **Show your work**.

a. $3a+5a=-72$

b. $3(n-4)=15$

c. $3b+5=7b-11$

d. $\frac{5}{p}=\frac{2}{6}$

e. $\frac{2}{n+3}=\frac{4}{4n}$

2. Solve and verify the following equations. **Show your work.**

(4) **a.** $2y-5=4y$

(4) **b.** $\frac{y-2}{5}=\frac{3y+4}{10}$

3. Write an equation that you would use to describe each problem. **Do not** solve the problem.

(1) **a.** Two less than three times a number is the same as twice the same number increased by five.

(1) **b.** A house and a lot combined cost \$120 000. If the house costs three times the price of the lot, how much did the house cost?

(2) **4.** Verify each of the following equations using -2 as a possible solution. For each equation, state whether -2 is the solution.

a. $3(x-2)=12$ **b.** $9(4+x)=18$

(4) **5.** Explain how you can use cylinders and counters (or any other model) to illustrate the algebraic solution for $3x=5x+2$.

(4)

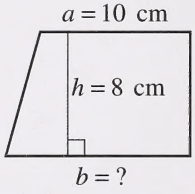
6. Express each of the following formulas in terms of the variable shown in parentheses. **Show your work.**

a. $C = 2\pi r \quad (r)$

b. $V = \frac{1}{2}abh \quad (h)$

(3)

7. The formula for the area of a trapezoid is $A = \frac{h(a+b)}{2}$. Use this formula to find the length of the base in the following trapezoid with an area of $96\ \text{cm}^2$.



(12)

8. Choose any **three** of the following problems and solve them. Be sure to clearly show how you arrived at your answer. You must solve at least two of the problems using equations.

a. The advance ticket sales for this year's school play were twice the total of last year's ticket sales. If 235 tickets were sold at the door to boost this year's total ticket sales to 825, how many tickets were sold last year?

b. Janelle bought some candy for $1.70. Janelle only bought jawbreakers (5¢ each) and licorice (8¢ each). If she bought five more licorice than jawbreakers, then how many of each kind of candy did Janelle buy?

c. Bret is presently nine years older than Joan. In eight years, six times Bret's age will equal seven times Joan's age. What are Bret's and Joan's present ages?

d. Mrs. Habscheid has a plot of ground in her backyard prepared for a garden. She wants to use half of the space for vegetables, a quarter for fruit (raspberries and strawberries), a sixth for flowers, and the remaining $8\ m^2$ for a compost heap. How large is the space Mrs. Habscheid has prepared for her garden?

30

Section 2 Assignment: Inequations

Read all the parts of your assignment carefully and record your answers in the appropriate place.

3

1. Solve the following inequations. **Show your work**.

a. $m+7<11$ **b.** $2n \geq -12$ **c.** $y-3>-1$

6

2. Solve the following inequations. **Show your work.**

a. $-4a+8>-12$ **b.** $4(a-3) \leq -8$

c. $-12x<54$

3. Write an inequation that would describe each problem. **Do not** solve the problem.

(1) **a.** Three times the sum of a number and two is less than four times the same number.

(1) **b.** Gabriella is a waitress at a local restaurant and is only allowed to work a maximum of thirty hours per week. She worked twice as long on Tuesday as Monday, the same number of hours on Wednesday as on Monday, four more hours on Thursday than she did on Wednesday, and two hours more on Friday than she did on Wednesday. What is the greatest number of hours that Gabriella could have worked during her shift on Monday?

(4) **4.** Verify each of the following inequations using 4 as a possible solution. For each inequation, state whether 4 is a solution.

a. $x+2>6$

b. $-3n \leq -15$

c. $b-1>3$

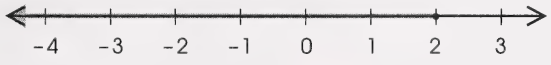
d. $4b-8<12$

(2) **5.** Solve and graph the solutions to these inequations on the number lines provided.

a. $-4x \leq 28$

(2) **b.** $3x + 4 > 10$, where the values of x are integers

(1) **6. a.** Write the inequality indicated by the following graph.



_____

(2)

b. Explain in words why you wrote the inequality as you did.

(8)

7. Choose any **two** of the following three problems and solve them. Be sure to clearly show how you arrived at your answer. You must use an inequation to solve at least one of the problems.

a. There is a nursery rhyme about an old woman who lived in a house built like a shoe and offered her home to many children. The capacity of the whole shoe was less than 100. The old lady divided the shoe into four levels (floors). The bottom floor held four times as many children as the top floor, and the two middle floors each held eight more than the top floor. What is greatest number of children the old lady could have living on each floor?

b. Seven more than double a number is greater than or equal to thirty-five. Find the number.

c. Troy withdrew $25 from his savings account so he could buy his mother a birthday present. If he still has more than $140 in his account, what is the minimum amount he could have had in his savings account?

25

Final Module Assignment

Read all the parts of your assignment carefully and record your answers in the appropriate place.

(8)

1. Solve the following equations and inequations using formal procedures. **Show your work**.

a. $4(y+3)=28$

b. $3a+7=5a-9$

c. $\frac{b}{2}+\frac{b}{3}+\frac{b}{4}=26$

d. $-4n-2\geq 22$

(2)

2. Does the indicated replacement for the variable make the equation or inequation true? Show the verification.

a. $4n-3\leq -27 \quad (n=-6)$

b. $3(2m+3)=45 \quad (m=7)$

(3)

3. You are given the following problem.

> The perimeter of a rectangle is 38 cm. The width is 3 cm less than the length. What are the dimensions of the rectangle?

Write an equation or inequation for solving the problem. **Do not** solve the problem.
Hint: You may find a diagram helpful.

(4)

4. Solve each equation for the indicated variable.

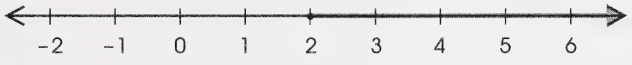
a. $I = prt \quad (r)$

b. $d = \frac{v}{t} \quad (t)$

5. Write an inequation for each of the following number line graphs.

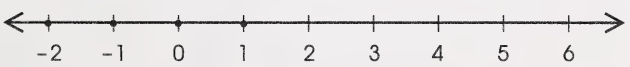
(1)

a.



(1)

b.



6. Solve the following problems. Be sure to clearly show how you arrived at your answer.

(3) **a.** Dr. Choi is twice as old as his son Alston. Fifteen years ago, he was five times Alston's age. How old are they now?

(3) **b.** Mrs. Dhaliwal is putting some preserves in two jars. One jar holds 4 mL more than twice the volume of the other jar. The two jars together hold less than 710 mL. What is the largest volume (to the nearest millilitre) the small jar can hold?

ASSIGNMENT BOOKLET DECLARATIONS

The Student's Declaration is to be filled in by a student registered at the Alberta Distance Learning Centre. If the student is under 16, the Learning Facilitator's Declaration is to be filled in by the learning facilitator. Failure to complete this page may invalidate the assignment results.

STUDENT'S DECLARATION

- I have followed the instructions outlined in the Student Module Booklet.
- I have completed the activities to prepare myself for the assignments in this Assignment Booklet.
- I completed the assignments in this Assignment Booklet by myself.

_____

Student's Signature

LEARNING FACILITATOR'S DECLARATION

I hereby certify that I have supervised the learning activities completed by _____.

Student's Name

I also certify that to the best of my knowledge the assignments in this Assignment Booklet were completed independently by this student.

_____

Supervisor's Signature

If you, the student or learning facilitator, have any comments or observations regarding this module, write them in the following space.

Mathematics 9
Assignment Booklet
Module 3

LRDC
Producer

1997